

PATENT  
W&B Ref. No. : INF 2003-US/PC  
Atty. Dkt. No. INFN/WB0035

### REMARKS

This is intended as a full and complete response to the Office Action dated November 23, 2005, having a shortened statutory period for response set to expire on February 23, 2006. Please reconsider the claims pending in the application for reasons discussed below.

Claims 11 and 14-24 are pending in the application. Claims 11 and 14-24 remain pending following entry of this response. Claims 11 and 19 have been amended to more clearly recite features previously presented. Applicants submit that the amendments do not introduce new matter and do not raise new issues.

#### Claim Rejections - 35 U.S.C. § 102

Claims 11, 14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by *Kubota* (5,065,215).

Applicants respectfully traverse this rejection.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

In this case, *Kubota* does not disclose "each and every element as set forth in the claim". For example, *Kubota* does not disclose "a doped region formed within the source/drain electrode, wherein the doped region is completely surrounded by the source/drain electrode except for a surface to contact the filling of the bit-line contact, the doped region comprising a locally limited electrically conductive contact layer which is formed substantially underneath the bit-line contact in the diffusion region and which has substantially no lateral migration underneath the insulator layer adjoining the bit-line contact."

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The Examiner argues that *Kubota* discloses "a doped region (19) formed completely within the source/drain electrode to contact (Col. 2, lines 12-14) the filling of the bit-line contact, the doped region comprising a locally limited electrically conductive contact layer (121) which is formed substantially underneath the bit-line contact in the diffusion region and which has a relatively reduced lateral migration underneath the insulator layer adjoining the bit-line contact (See fig. 1B)."

However, the cited passage and figure (Fig. 1B) clearly show that the "p+ type source (drain) region 121" is not completely within the "p- type layer 120" and is merely surrounded on its side portions, but open through the bottom portion. Therefore, *Kubota* does not disclose a "doped region completely surrounded by the source/drain electrode except for a surface to contact the filling of the bit-line contact." Furthermore, the "p+ type source (drain) region 121" clearly extends substantially underneath the insulator layer (i.e., oxide film 111 in Fig. 1B) adjoining the bit-line contact. In fact, "the "p+ type source (drain) region 121" appears to extend underneath more than half of the width of the insulator film 111. Therefore, *Kubota* does not disclose "the doped region comprising a locally limited electrically conductive contact layer which is formed substantially underneath the bit-line contact in the diffusion region and which has substantially no lateral migration underneath the insulator layer adjoining the bit-line contact."

Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

#### Claim Rejections - 35 U.S.C. § 103

Claims 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kubota* as applied to claims 11, 14 and 16 above, and further in view of *Lu* (6,218,639). Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kubota* as applied to claims 11, 14 and 16 above, and further in view of *Bollinger et al.* (6,762,136, hereinafter *Bollinger*), and further in view of *Lu*.

Applicants respectfully traverse these rejections.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2142. To establish a *prima facie* case of obviousness three

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basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP § 2143. The present rejection fails to establish at least the third criteria.


As discussed above, *Kubota* does not teach, show or suggest the doped region as recited in the claims. *Lu* and *Bollinger*, as discussed previously (in the Response to Final Office Action dated July 12, 2005, pages 5-7), also, fail to teach, show or suggest the claimed subject matter. The references cited by the Examiner, either alone or in combination, do not teach show or suggest "a doped region completely surrounded by the source/drain electrode except for a surface to contact the filling of the bit-line contact, the doped region comprising a locally limited electrically conductive contact layer which is formed substantially underneath the bit-line contact in the diffusion region and which has substantially no lateral migration underneath the insulator layer adjoining the bit-line contact."

Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

#### Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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